Page 2

Application No: 10/663,024

Docket No.: Q201-US1

RECEIVED
CENTRAL FAX CENTER

IN THE CLAIMS

JAN 1-1 2007

Please amend the claims as follows:

- 1. (original) A electrochemical device, comprising: an electrolyte including a cyclic polysiloxane having one or more side chains that each include a poly(alkylene oxide) moiety and a spacer positioned between the poly(alkylene oxide) moiety and a silicon on a main chain of the polysiloxane.
- 2. (original) The device of claim 1, wherein the spacer includes one or more carbons.
- 3. (original) The device of claim 1, wherein the spacer includes one or more CH2 groups.
- 4. (original) The device of claim 1, wherein the spacer includes 2 or more CH₂ groups.
- 5. (original) The device of claim 1, wherein the spacer includes 6 or fewer CH₂ groups.
- 6. (original) The device of claim 1, wherein the poly(alkylene oxide) moiety includes a poly(ethylene oxide) moiety.
- 7. (original) The device of claim 1, wherein the cyclic polysiloxane is cross-linked.
- 8. (original) The device of claim 1, wherein the polysiloxane has a structure represented by

$$\begin{bmatrix} R \\ S \\ O \end{bmatrix} \begin{bmatrix} R \\ R \end{bmatrix}$$

the formula: R_1 wherein R is an alkyl or aryl group; R' is an alkyl or aryl group; R₁ is hydrogen or an alkyl group; R₂ is a spacer made up of one or more CH_2 groups; n is from 1 to 100; and x is from 1 to 30.

Docket No.: Q201-US1

Page 3

- 9. (original) The device of claim 8, wherein the electrolyte is a liquid.
- 10. (withdrawn) The device of claim 1, wherein the polysiloxane has a structure represented

$$\begin{array}{c|c}
R & R^{m} \\
\hline
(S \mid -O)_{n} & (S \mid -O)_{p} \\
\hline
R_{2} & O \\
\hline
(S \mid -O)_{p} & O \\
\hline
(S$$

by the formula:

wherein R is an alkyl

group, R' is an alkyl or aryl group, R''' is alkyl or hydrogen; R_1 is hydrogen or an alkyl group; R_2 is a spacer made up of one or more CH_2 groups; p is greater than 0; n is from 1 to 100; x is from 1 to 30; and Q is a cross-linker linking the polysiloxane to another polysiloxane.

- 11. (withdrawn) The device of claim 10, wherein the electrolyte is a solid.
- 12. (withdrawn) The device of claim 10, wherein at least a portion of the cross-linkers include a moiety selected from the group consisting of O-(CH₂CH₂O)_q and Si-O-(Si-O)_k-Si, where q is at least 4 and less than 30, and k is at least 5 and less than 30.
- 13. (original) The device of claim 1, wherein the electrolyte and further includes: at least one alkali metal salt.
- 14. (original) The device of claim 13, wherein the alkali metal salt is selected from a group consisting of: LiClO₄, LiBF₄, LiAsF₆, LiPF₆, LiCF₃SO₃, Li(CF₃SO₂)₂N, Li(CF₃SO₂)₃C, LiN(SO₂C₂F₅)₂), lithium alkyl fluorophosphates, lithium bis(chelato)borates, LiPF₃(C₂F₅)₃, and LiPF₃(CF₃)₃.
- 15. (original) The device of claim 1, wherein the electrolyte includes a lithium bis(chelato)borate having 5 to 10 membered rings.

Docket No.: Q201-US1

Page 4

16. (original) The device of claim 1, wherein the electrolyte includes a lithium bis(chelato)borate having 5 to 7 membered rings.

17. (original) The device of claim 1, wherein the cyclic polysiloxane is entrapped within at least one cross-linked network polymer.

18. (original) The device of claim 17, wherein the electrolyte is a solid.

19. (withdrawn) The device of claim 17, wherein the at least one network polymer includes a poly(methacrylate).

20. (withdrawn) The device of claim 17, wherein the network polymer is formed from a monomer represented by general formula:

wherein R is an alkyl group having 1 to 10 carbon atoms; each of R' and R" is selected from the group consisting of: hydrogen, an alkyl group having 1 to 10 carbon atoms, and an alkenyl group having 2 to 12 carbon atoms; X is hydrogen or a methyl group; and n is 1 to 15.

21. (original) The device of claim 17, wherein the network polymer includes a cross-linked polysiloxane.

22. (original) The device of claim 17, wherein the network polymer includes a polysiloxane where at least a portion of the main chain silicons are linked to side chains that each include a poly(alkylene oxide) moiety.

23. (original) The device of claim 22, wherein at least a portion of the main chain silicons are bonded to a cross-linker having a moiety selected from the group consisting

Docket No.: Q201-US1

Page 5

of: O-(CH₂CH₂O)_q and Si-O-(Si-O)_k-Si, where q is at least 4 and less than 30, and k is at least 5 and less than 30.

- 24. (original) The device of claim 22, wherein n of the main chain silicons are bonded to a cross-linker and m of the main chain silicons bonded to a side chain, a ratio of n:m being in a range of 1:4 to 1:200.
- 25. (original) The device of claim 24, wherein the ratio of n:m is in a range of 1:6 to 1:100.
- 26. (original) The device of claim 1, wherein the electrolyte further includes: at least one solid polymer.
- 27. (original) The device of claim 26, wherein the at least one solid polymer is selected from the group consisting of: polyacrylonitrile (PAN), poly(methyl methacrylate) (PMMA), poly(vinylidene fluoride) (PVdF), poly(vinylidene fluoride-co-hexafluoropropylene), poly(vinyl acetate), polystyrene, and poly(ethylene oxide) (PEO).
- 28. (original) The device of claim 1, wherein the average molecular weight of the cyclic polysiloxane is less than or equal to 20,000 g/mol.
- 29. (original) The device of claim 1, wherein the dynamic viscosity of the cyclic polysiloxane is less than or equal to 10,000 cps.
- 30. (original) The device of claim 1, wherein the molar ratio of [EO]/[Li] is 5 to 50.
- 31. (original) The device of claim 1, further comprising:
 at least one lithium metal oxide cathode, at least one porous separator, and at least one anode.

Docket No.: Q201-US1

Page 6

- 32. (original) The device of claim 31, wherein the at least one anode comprises at least one material selected from the group consisting of: carbon and lithium metal.
- 33. (original) The device of claim 1, wherein the electrolyte includes a blend of polysiloxanes.
- 34.-41. (canceled)
- 42. (new) The device of claim 8, wherein the electrolyte further includes a polysiloxane having a structure represented by the formula:

$$\begin{array}{c|c}
R & R''' \\
\hline
(S \mid -O)_{\Pi} & (S \mid -O)_{p} \\
\hline
R_{2} & Q \\
\hline
(Y \mid -O)_{X} - R'
\end{array}$$

wherein R is an alkyl group, R' is an alkyl

or aryl group, R''' is alkyl or hydrogen; R_1 is hydrogen or an alkyl group; R_2 is a spacer made up of one or more CH_2 groups; p is greater than 0; n is from 1 to 100; x is from 1 to 30; and Q is a cross-linker linking the polysiloxane to another polysiloxane.

- 43. (new) The device of claim 42, wherein the electrolyte is a solid.
- 44. (new) The device of claim 42, wherein at least a portion of the cross-linkers include a moiety selected from the group consisting of $O-(CH_2CH_2O)_q$ and $Si-O-(Si-O)_k-Si$, where q is at least 4 and less than 30, and k is at least 5 and less than 30.